

AMENDMENTS TO THE CLAIMS

A detailed listing of all claims that are, or were, in the present application, irrespective of whether the claim(s) remains under examination in the application are presented below. The claims are presented in ascending order and each includes one status identifier. Those claims not cancelled or withdrawn but amended by the current amendment utilize the following notations for amendment: 1. deleted matter is shown by strikethrough for six or more characters and double brackets for five or less characters; and 2. added matter is shown by underlining.

1-15. (Canceled).

Please add the following new claims:

16. (New) An implementation process of a conversational rational agent as a kernel of a dialog system and as an agent of a multi-agent system, the process including the following stages:

definition of a conceptual architecture of a conversational rational agent,

formal specification of components of the architecture and a combination of the components permitting a formal model to be obtained,

wherein the process further includes a definition of a software architecture implementing the formal architecture, the software architecture definition comprising:

a definition of mechanisms that implement the formal specification including:

data including predefined axiom schemes and axiom schemes dependent on a desired application,

a knowledge base dependent on the desired application including a semantic network and

inter-concept distances, and

an inference engine to implement formal specification mechanisms by data and the knowledge base in order to receive a first logical statement, understand the first logical statement, and provide a second logical statement in response,

wherein the rational agent is intended to converse with another agent or with a system user through a communications medium.

17. (New) An implementation process according to the claim 16, wherein the definition of the software architecture implementing the formal architecture is realized by a rational unit including a rationality axioms implementation layer, a communication axioms implementation layer, and a cooperation axioms implementation layer, corresponding respectively to axioms predefined by the formal model.

18. (New) An implementation process according to claim 17, wherein the definition of the software architecture implementing the formal architecture further includes:

a generation module operable to transcribe a sequence produced by the rational unit in a natural language statement of a user and a comprehension module to interpret the natural language statement of the user into a logical statement comprehensible by the rational unit to implement a natural language communications layer.

19. (New) An implementation process according to claim 18, wherein the implementation of mechanisms for implementing the formal model is realized by the rational unit, the generation module, and comprehension module.

20. (New) A conversational rational agent placed as a kernel of a dialog system and as an

agent of a multi-agent system, the rational agent including:

- a definition of a conceptual architecture,
- a formal specification of components of the architecture and a combination of the components allowing a formal model to be obtained,

wherein the rational agent further includes:

- a software architecture implementing a formal architecture and including a rational unit intended to implement mechanisms for implementation of the formal specification, the rational unit including:

- data including predefined axiom schemes and axiom schemes dependent on a desired application, a knowledge base dependent on the application including a semantic network and inter-concept distances, and

- an inference engine to implement formal specification mechanisms by data and the knowledge base in order to receive a first logical statement, understand the first logical statement, and provide a second logical statement in response.

21. (New) A conversational rational agent according to claim 20, wherein the data comprise implementation data of a formal model including:

- an implementation layer of rationality axioms, an implementation layer of communication axioms, and an implementation layer of cooperation axioms, corresponding respectively to axioms of the formal model.

22. (New) A conversational rational agent according to claim 20, further comprising:

- a natural language statement generation module from a logical statement coming from the rational unit and a comprehension module to provide a logical language statement to the rational unit from a natural language statement, wherein the natural language statement generation

module and the comprehension module implement a communications layer in natural language.

23. (New) A conversational rational agent according to claim 22, wherein the conversational rational agent is implemented in a man/machine dialog system.

24. (New) An information server comprising means for implementing a man/machine dialog system, wherein the man/machine dialog system comprises:

- a conversational rational agent placed as a kernel of a dialog system and as an agent of a multi-agent system, the rational agent including:

- a definition of a conceptual architecture;

- a formal specification of components of the architecture and a combination of the components allowing a formal model to be obtained;

- a software architecture implementing a formal architecture and containing a rational unit intended to implement mechanisms for implementation of the formal specification, the rational unit including:

- data including predefined axiom schemes and axiom schemes dependent on a desired application, a knowledge base dependent on the application including a semantic network and inter-concept distances; and

- an inference engine to implement formal specification mechanisms by data and the knowledge base in order to receive a first logical statement, understand the first logical statement, and provide a second logical statement in response;

- and a natural language statement generation module from a logical statement coming from the rational unit and a comprehension module to provide a logical language statement to the rational unit from a natural language statement, wherein the natural language statement generation module and the comprehension module implement a communications layer in natural

language.

25. (New) A multi-agent system including communicating agents, each agent comprising means for implementing a communication interaction, wherein the multi-agent system comprises at least one agent as a kernel of a dialog system implemented by a process including the following stages:

definition of a conceptual architecture of a conversational rational agent,

formal specification of components of the architecture and a combination of the components permitting a formal model to be obtained,

wherein the process further includes a definition of a software architecture implementing the formal architecture, the software architecture definition comprising:

a definition of mechanisms that implement the formal specification including:

data including predefined axiom schemes and axiom schemes dependent on a desired application,

a knowledge base dependent on the desired application including a semantic network and inter-concept distances, and

an inference engine to implement formal specification mechanisms by data and the knowledge base in order to receive a first logical statement, understand the first logical statement, and provide a second logical statement in response,

wherein the rational agent is intended to converse with another agent or with a system user through a communications medium.